

## **RADIOLOGIC TECHNOLOGY**

**Course Title:** RADIOGRAPHIC IMAGING II  
**Course Prefix:** RAD 115  
**Credit Hours:** 3.0  
**Lecture Hours:** 2.0  
**Lab Hours:** 3.0

[Distance Learning Attendance/VA Statement](#)  
[Textbook Information](#)

### **COURSE DESCRIPTION**

This course continues a detailed study of primary and secondary influencing factors and accessory equipment related to imaging.

#### **Module I: Radiographic Density**

- Analyze radiographic quality.
- Differentiate the meaning of sharpness of detail versus visibility of detail.
- Differentiate between photographic and geometric properties and which factors regulate each.
- Examine radiographic density.
- Distinguish between the factors which control and influence radiographic image density and discuss how they affect it.
- Calculate technical factors using mAs Law formula.
- Calculate technical factors using Intensification factor formula.
- Calculate technical factors using the 15% KVP rule.

#### **Module II: Radiographic Contrast**

- Relate radiographic contrast to subject and film contrast.
- Distinguish the factors which control and influence radiographic contrast and discuss how they affect it.
- Describe the different devices/methods of beam restriction and discuss how each affects image contrast.
- Evaluate the different types/ratios of grids and discuss how each affects image contrast.
- Assess the different speeds of screens and how each affects image contrast.

#### **Module III: Recorded Detail and Distortion**

- Evaluate image definition.
- Classify causes of motion and their effects on image unsharpness and discuss methods of eliminating motion.
- Explain what is meant by material unsharpness and describe the effects that different types of radiographic film and intensifying screens have on image sharpness/unsharpness.
- Dissect modulation transfer function.

- Examine the conditions that cause quantum mottle and explain how it might be prevented.
- Analyze what is meant by geometric unsharpness and describe the effects that different focal spot sizes, object-film distances and focal spot-film distances have on image sharpness/unsharpness.
- Distinguish between penumbra and umbra.
- Differentiate size and shape distortion.
- Categorize the factors which control and influence size distortion and discuss how they affect it.
- Categorize the factors which control and influence shape distortion and discuss how they affect it.
- Calculate factors using the magnification factor and % magnification formulas.
- Evaluate radiographic quality.
- Outline and define proper oral communication skills to include presentation preparation and delivery.

#### **Module IV: Technical Factor Selection**

- Describe and discuss automatic exposure control.
- Describe and discuss the necessary information that should be included on a technique chart.
- Classify the information that is not considered in the technique chart that would require technical adjustment.
- Determine why age, size, and pathology of the patient must be considered when selecting technical factors.
- Determine how standard radiographic positions affect exposure and why the technique should be adjusted for each.
- Relate two types of technique charts commonly implemented and define the advantages and disadvantages of using each.
- Analyze how the use of contrast media (positive and negative) influences the selection of technical factors.
- Differentiate technique selection systems

#### **ACADEMIC INTEGRITY**

The policies stated in the YTC Student Catalog and the Radiologic Technology Student Manual will be enforced. Any student violating the policies will be subject to academic discipline as stated.

#### **COURSE REQUIREMENTS**

All students are responsible for attaining competencies through the completion of the following course requirements:

- Attending class
- Reading assigned materials
- Participating in class, CAI, and laboratory activities
- Class presentations

## **PERFORMANCE OBJECTIVES/MINIMAL STANDARDS**

Performance objectives for each instructional unit are included in this syllabus. A minimum grade of 80% is required to pass the course (See Grading Procedures).

## **GRADING PROCEDURES**

Unit tests and some subunit tests will be given. A minimum grade of 80% is required on all unit tests. Any student who fails a unit test will be required to take a comprehensive final exam at the end of the semester. The final exam will count 1/3 of the final grade:

Unit tests=66% of the final grade

(Projects/Presentations will be averaged together at the end of the semester and will count as one unit test)

(Final exam=33% of the final grade as required)

The following grading scale applies:

<b>GRADE</b>	<b>SCORE</b>
A	93-100
B	86-92
C	80-85
D	70-79
F	BELOW 70

## **ENTRY LEVEL SKILLS**

A student entering this course must be enrolled in the Radiologic Technology Program as a first-year student.

## **PREREQUISITES**

RAD 102, RAD 101, RAD 152, RAD 110, RAD 130, RAD 165, RAD 105

## **CO-REQUISITES**

RAD 136, RAD 175

**Disabilities Statement:** Any student who feels s/he may need an accommodation based on the impact of a disability should contact the Special Resources Offices (SR) at 803-327-8007 in the 300 area of Student Services. The SRO coordinates reasonable accommodations for students with documented disabilities.